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Nota di contenuto	1. Introduction -- 2. Mathematics, Signals and Control Library -- 3. The Mechanical Twin -- 4. The Thermal Twin -- 5. The Hydraulic Twin -- 6. The Pneumatic Twin -- 7. The Electric Twin -- 8. Analysis of Complex Technical Systems -- 9. Digital Twins and Artificial Intelligence -- 10. Conclusions.
Sommario/riassunto	Creating a digital twin should be easy and intuitive. This book presents twins from different technical fields and describes in detail how to build them. The book is aimed at students or young engineers who want develop and modify the twins without much prior knowledge. The use of the free software tool Simcenter Amesim is introduced. Simcenter Amesim belongs today to the industry standard for the development of digital twins. This program was chosen because it is easy to learn and does not require deep mathematical knowledge or programming skills. We start by creating a simple calculator, then model, for example, mechanical twins such as falling balls, ventilation and tank systems, pipelines, or a solar collector. The physical background is explained for each simulation example, and each simulation example concludes with suggestions for further work. This enables the reader to perform further investigations and exercises with the digital twins.